
Galena Creek Falls
Credit: N. Coehring

NEVADA DIVISION OF WATER RESOURCES

Nevada Department of CONSERVATION & NATURAL RESOURCES

Inventory of Water Resources in Nevada

Stakeholder Advisory Group Meeting
June 6, 2023

Nevada Division of Water Resources (NDWR)
Water Planning and Drought Resiliency Section (WP&DR)

Why inventory current water resources?

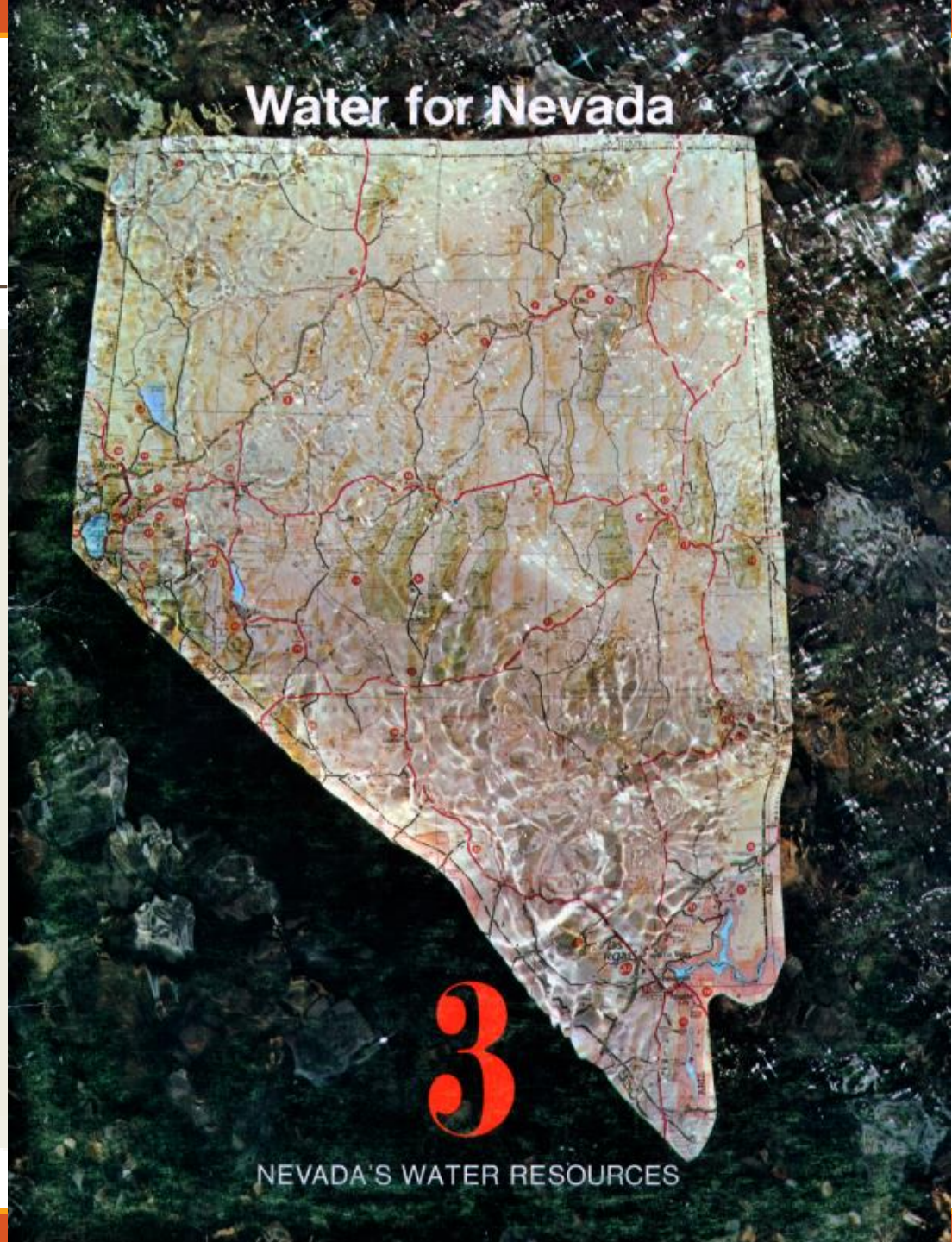
- Determine water supply availability
- Assess sustainability of water use
- Establish baseline for estimating future supplies
- Evaluate water management strategies

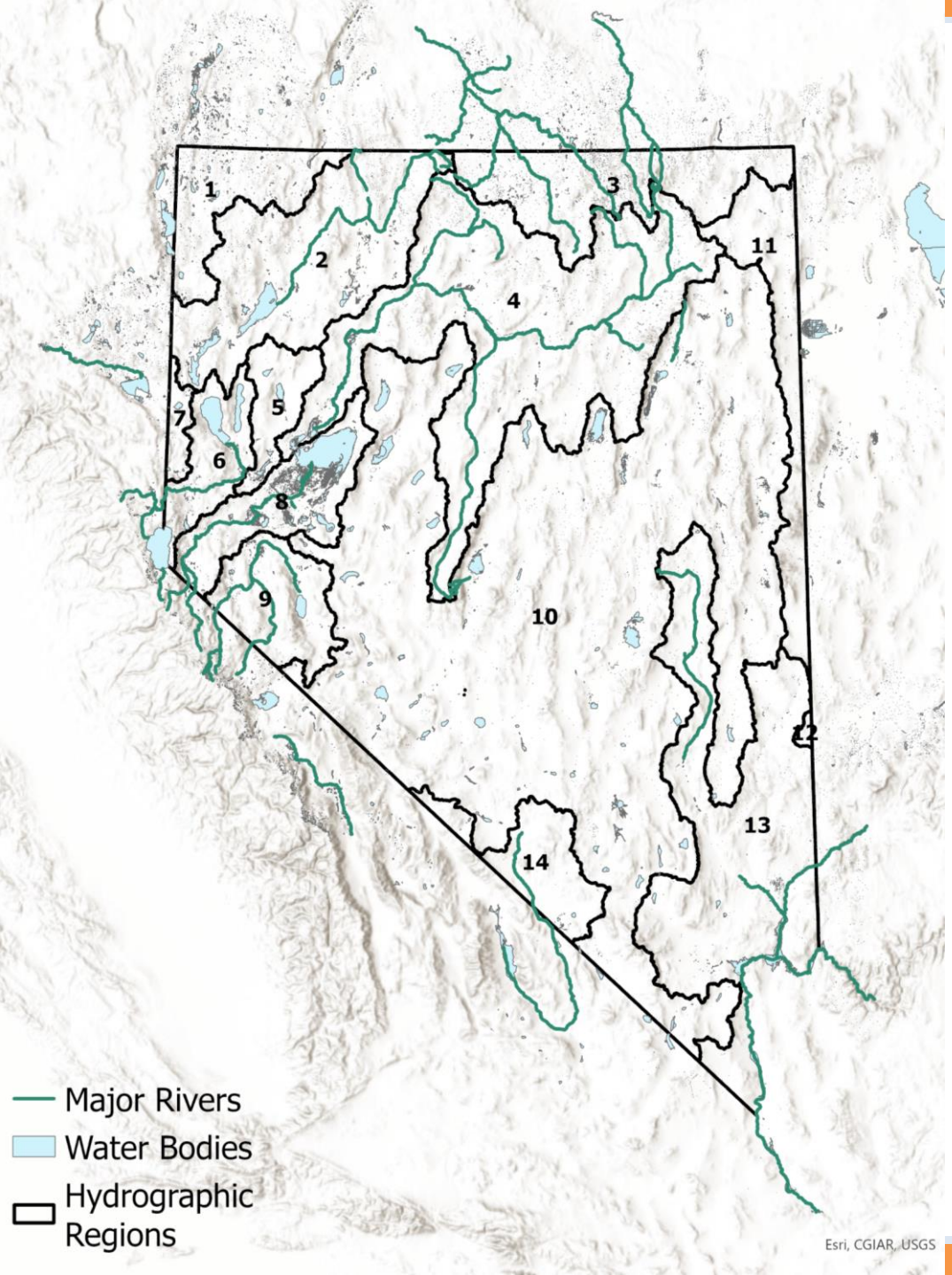
State Water Plan: Water Resources Section

Goal: Overview of water resources & "state of the state" summary of data

Report No. 3: Nevada's Water Resources (1971)

- Inventory of the water resources of the State and represented the water supply presently available to Nevada
- Data come from reports compiled as a product of the cooperative program between USGS and NDWR
  - 1946 – Beginning of Water Resources Bulletin Series
  - 1960 – Beginning of Groundwater Resources – Reconnaissance Series
- Studies at the reconnaissance level are "**useful for broad planning and general information**, but these figures are **not necessarily suitable as a source of information for local or detailed planning**."



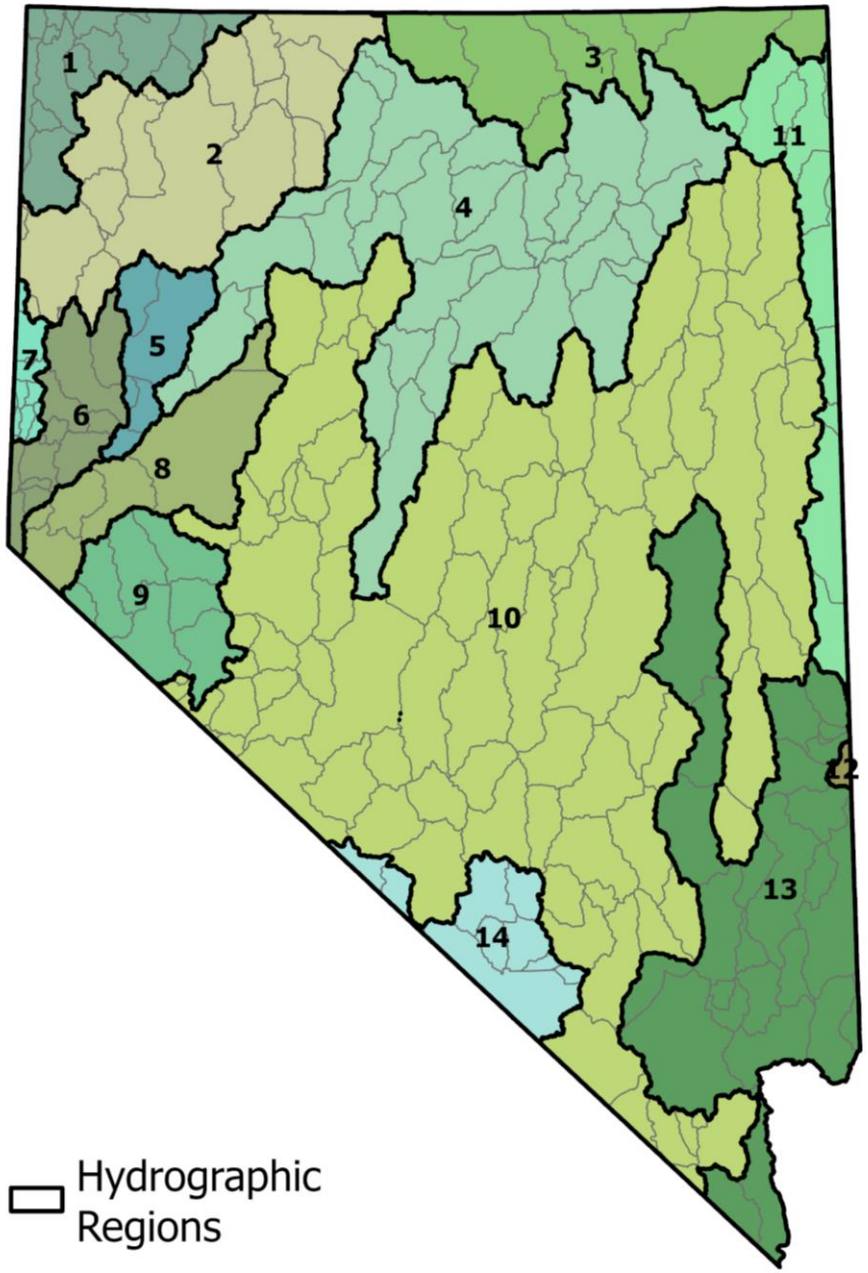


Surface Water

- Excluding the Colorado River, Nevada has approximately **3.2 million acre-feet of runoff** within the state, plus **1.3 million acre-feet flowing into the state**
- "However, it is **not practical or economically feasible to develop all of this runoff** for use"
- Surface water managed under:
  - Federal, State, and Civil Decrees
  - Colorado River Compact/Law of the River
  - State appropriation process

Surface Water Inventory

Hydrographic ID	Hydrographic Region	Average Precipitation (AFA)	Runoff from Mountains (AFA)	Surface Water Inflow (AFA)	Surface Water Evaporation (AFA)	Surface Water Outflow (AFA)
1	Northwest Region	1,600,000	140,000	Some	Some	Some
2	Black Rock Desert Region	4,200,000	250,000	1,000	5,000	Minor
3	Snake River Basin	3,900,000	680,000	17,000	Some	510,000
4	Humboldt River Basin	9,900,000	770,000		Large	Minor
5	West Central Region	590,000	2,700	235,000	11,000	180,000
6	Truckee River Basin	1,300,000	140,000	520,000	580,000	235,000
7	Western Region	280,000	25,000	Minor	Some	6,000
8	Carson River Basin	1,400,000	43,000	320,000	Large	
9	Walker River Basin	1,200,000	60,000	290,000	225,000	1,000
10	Central Region	22,000,000	900,000	12,000	Minor	1,400
11	Great Salt Lake Basin	1,90000	78,000		Minor	Some
12	Escalante Desert Basin	76,000	3,200		Minor	400
13	Colorado River Basin	4,800,000	70,000	10,000,000	1,000,000	9,400,000
14	Death Valley Basin	810,000	1,700		Minor	50
	Statewide (rounded)	**54,000,000**	**3,200,000**	**>11,000,000**	**>1,800,000**	**>10,000,000**



Groundwater

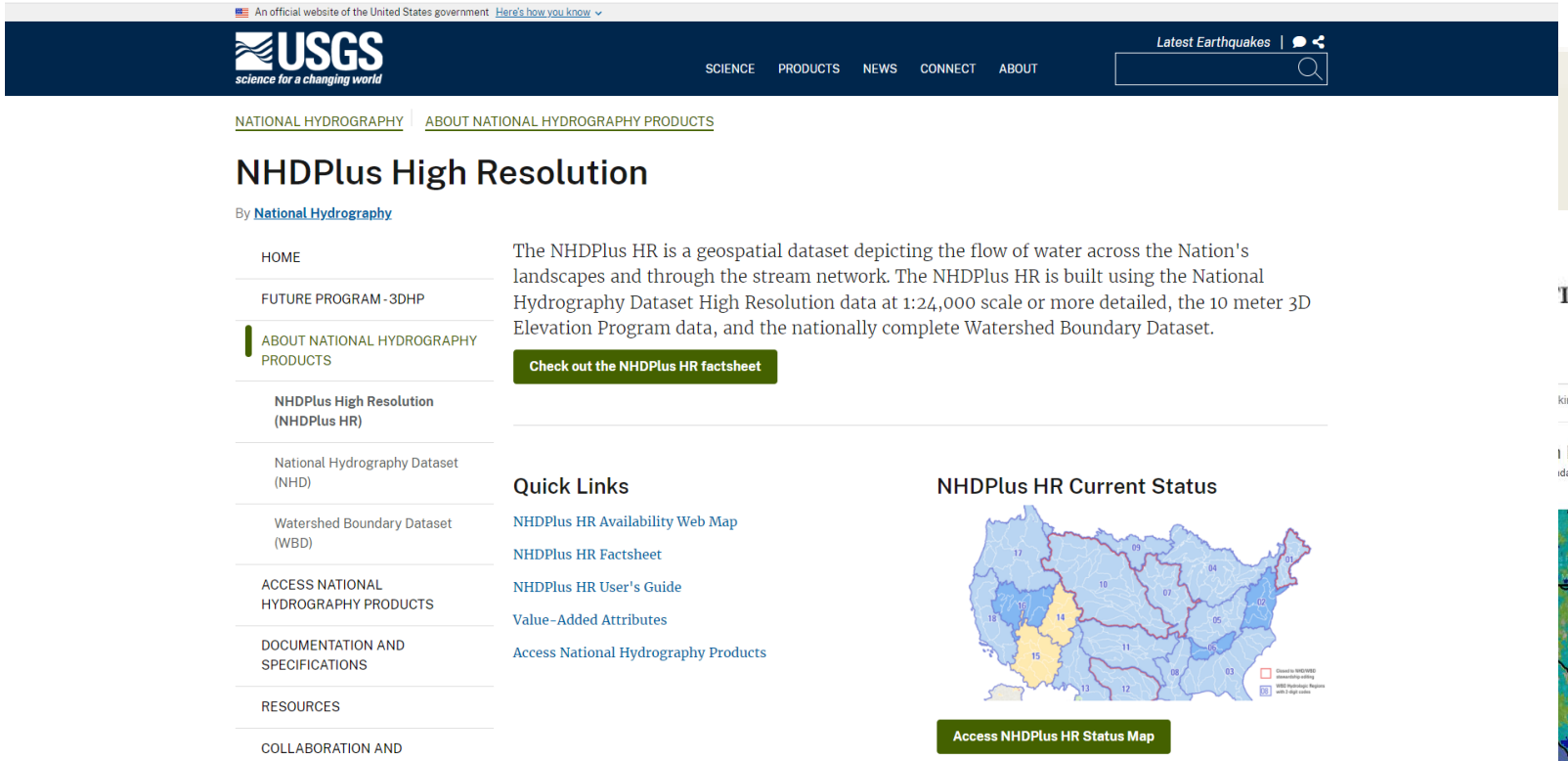
- **"Perennial yield** of a ground water reservoir may be defined as the **maximum amount of ground water that can be salvaged each year over the long term** without depleting the ground water reservoir"
- Perennial yield of all valley-fill reservoirs was estimated to be **1.7 million acre-feet**
- Groundwater managed through the State appropriation process based on the perennial (or system) yield of the individual basin(s)

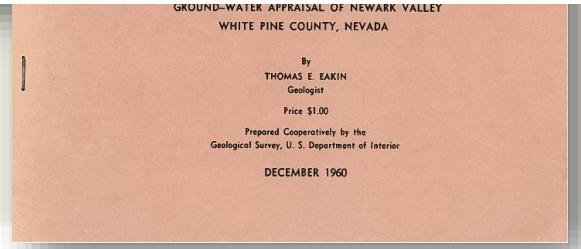
Groundwater Inventory

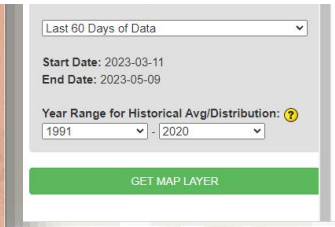
Hydrographic ID	Hydrographic Region	Groundwater Recharge From Precipitation (AFA)	Perennial Yield (AFA)	Groundwater Inflow (AFA)	Groundwater ET (AFA)	Groundwater Outflow (AFA)
1	Northwest Region	64,000	55,000	Minor	45,000	13,000
2	Black Rock Desert Region	160,000	150,000	Minor	170,000	500
3	Snake River Basin	160,000	60,000	Some	42,000	Some
4	Humboldt River Basin	500,000	430,000	0	430,000	9,000
5	West Central Region	5,500	8,000	0	7,400	4,800
6	Truckee River Basin	150,000	600,000*	4,600	16,000	Some
7	Western Region	11,000	12,000	600	9,000	2,800
8	Carson River Basin	45,000				
9	Walker River Basin	46,000	>300,000*	Some	92,000	150
10	Central Region	770,000	800,000	21,000	630,000	140,000
11	Great Salt Lake Basin	93,000		16,000	28,000	70,000
12	Escalante Desert Basin	2,300	1,000	0	Minor	2,300
13	Colorado River Basin	110,000	200,000	50,000	130,000	55,000
14	Death Valley Basin	4,800	61,000	40,000	26,000	20,000
	Statewide (rounded)	**2,121,600**	**1,777,000***	**132,200**	**1,625,400**	**317,550**

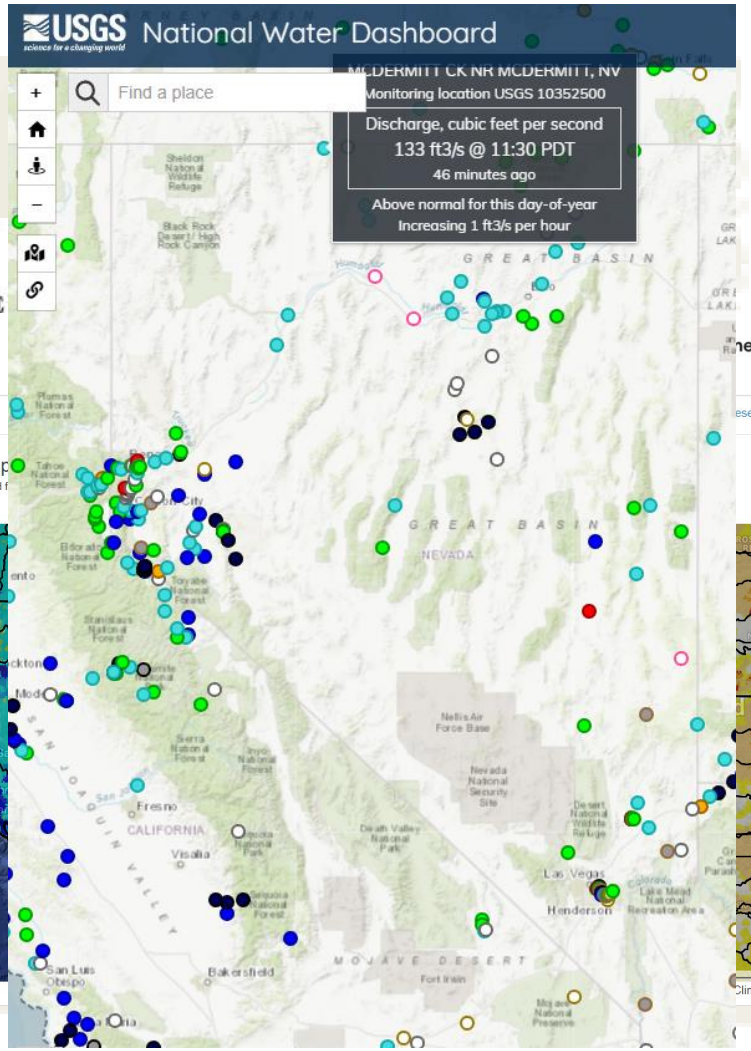
*System yield. Statewide total perennial yield does not include system yields.

Additional Sources of Water Resource Data









Challenges & Limitations

- Surface water and groundwater estimates were largely reconnaissance efforts. They do not account for changes in climate.
- The concept of perennial yield is not perfect ("water-budget myth")
- Separate surface water and groundwater accounting does not convey the conjunctive nature of water resources

Next Steps: The Nevada Water Resource Initiative

- Partnership between NDWR, DRI, and USGS
- Use new technologies and data to update the science and understanding of water resources
- Identify where water enters and leaves our hydrographic basins and re-estimate water budgets
- Develop the resources and tools for sustainable management

QUESTIONS?

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